

Applicant : Yusuke Igarashi et al.
Serial No. :
Filed : April 8, 2004
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Attorney's Docket No.: 14225-005002 / F1020281US01

REMARKS

This application is a continuation of serial no. 10/172,415.

Claims 19-39 are pending.

Applicant asks that all claims be examined.

Please apply any other charges or credits to deposit account 06-1050.

Respectfully submitted,

Date: 4/14/04



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Abstract

A conductive plated layer 4 is formed after through holes 21 are formed in the insulation resin 2 by using an insulation resin sheet 1 overcoated on a single side of the conductive layer 3 with insulation resin 2. A multi-layer connection structure can be achieved by the second conductive path layer 6 which is connected, in multi layers, to the first conductive path layer 5 formed by etching the conductive plated layer 4. Further, since semiconductor elements 7 are adhered to and fixed at the overcoating resin 8 that covers the first conductive path layer 5, the first conductive path layer 5 is finely patterned, and routing thereof can be made free. Further, since the second conductive layer 4 that has been formed to be thick can be thinly etched, the second conductive path layers 6 can be finely patterned.

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FIG.1

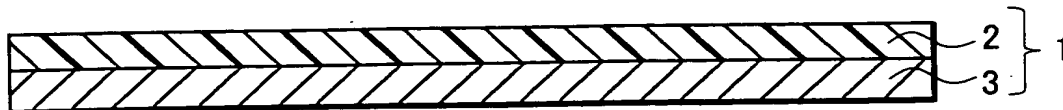


FIG.2

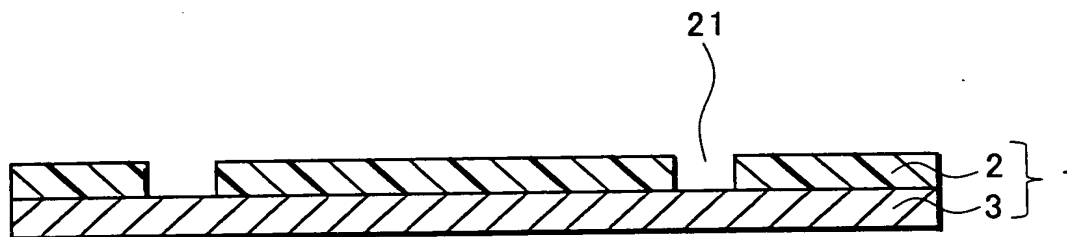


FIG.3

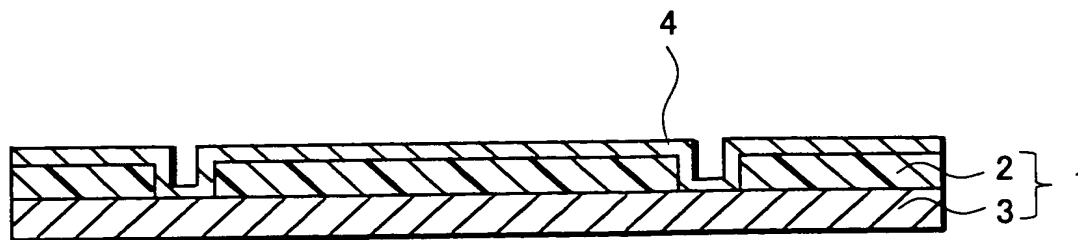


FIG.4

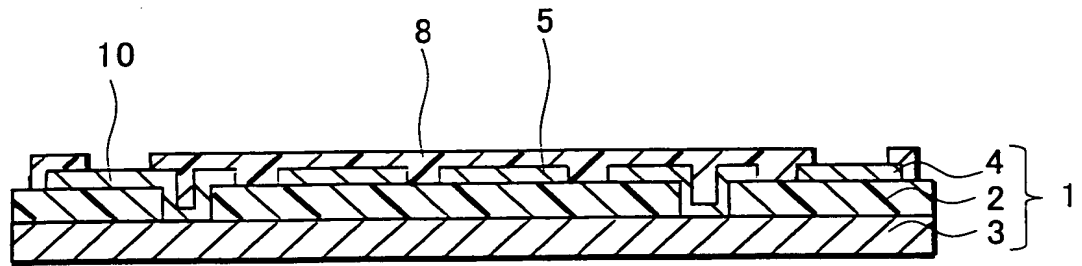


FIG.5

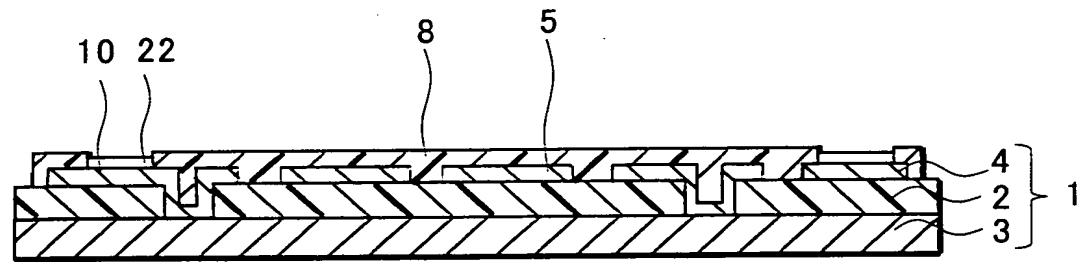
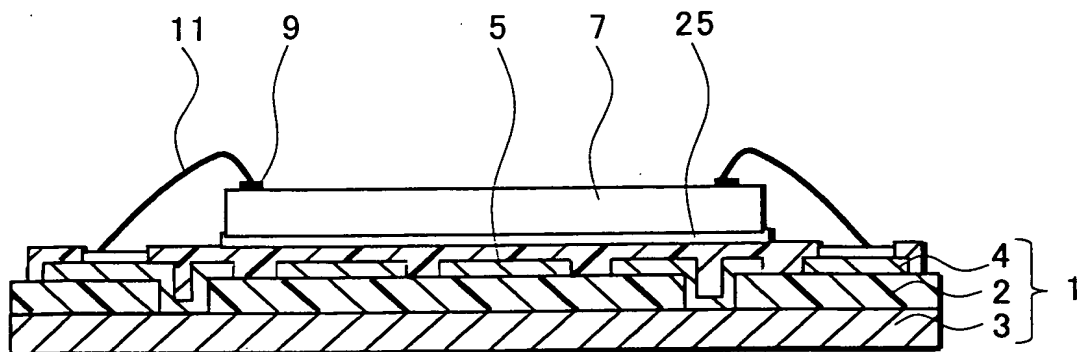


FIG.6



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FIG.7

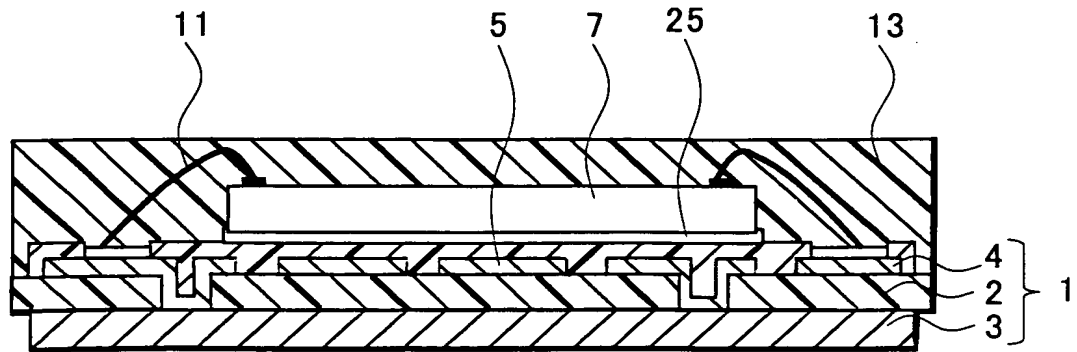


FIG.8

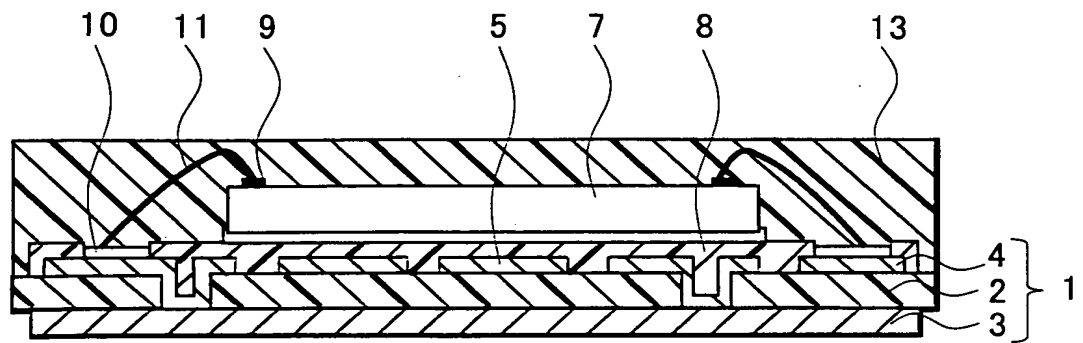
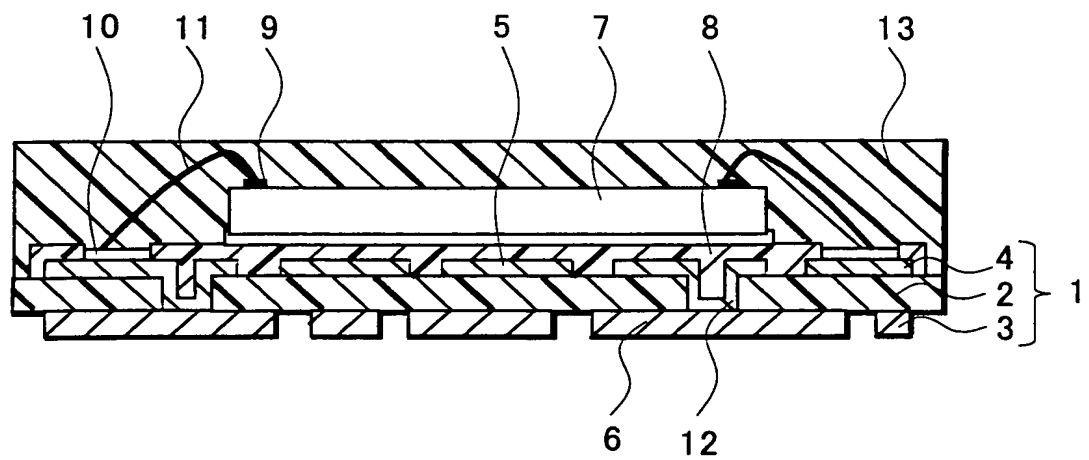


FIG.9



A detailed cross-sectional view of a multi-layered electronic device assembly. The assembly consists of several layers and components, labeled with reference numerals. At the top is a thick substrate (13) with diagonal hatching. Below it is a thin layer (5). A central layer (7) contains a rectangular component (9). Below this is another thin layer (8). The bottom section consists of a stack of layers (2, 3, 4) with a wavy, interlocking pattern. Below these layers are three circular components (14, 6, 12) and a final layer (15). The entire assembly is shown in a perspective view, with some components having curved top surfaces.

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FIG.11

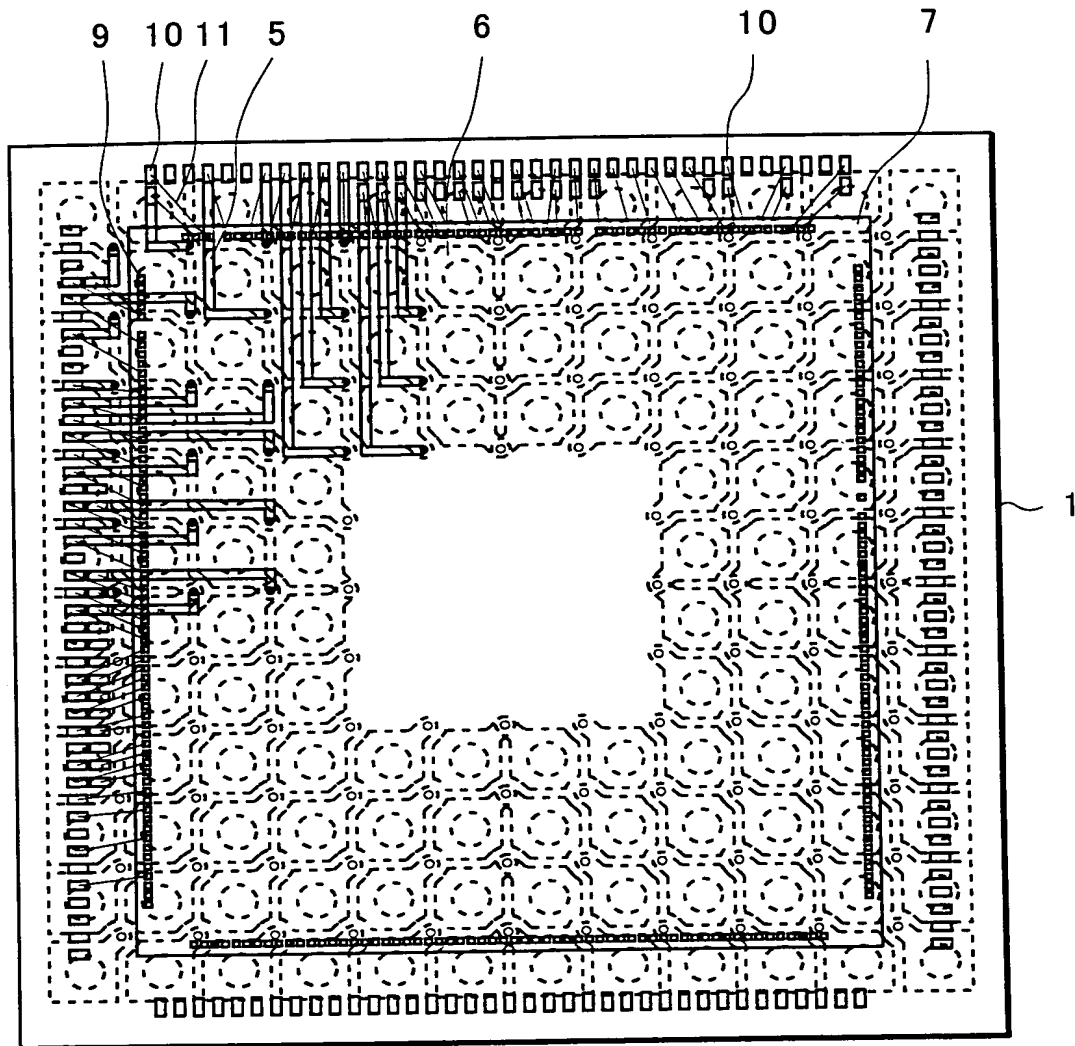
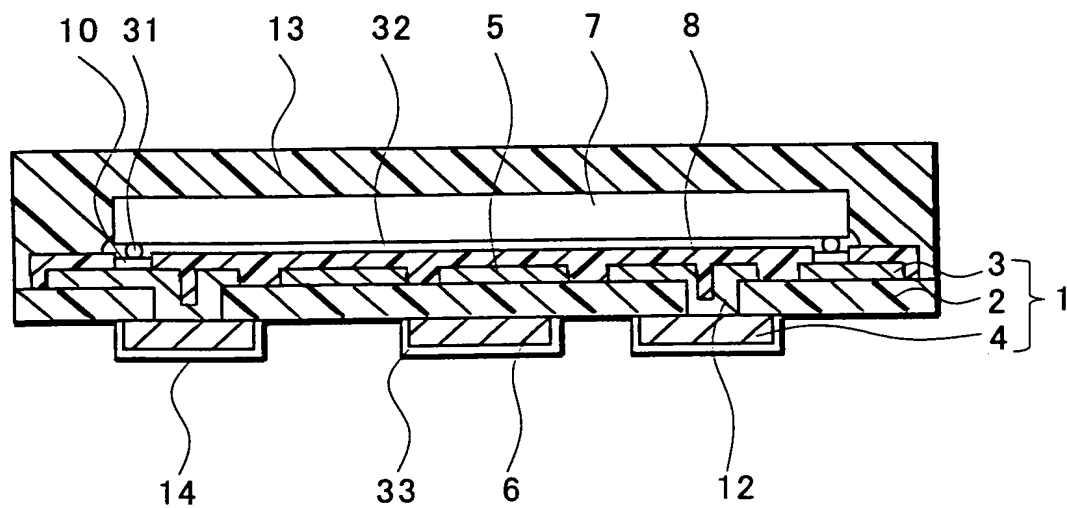


FIG.12



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FIG.13

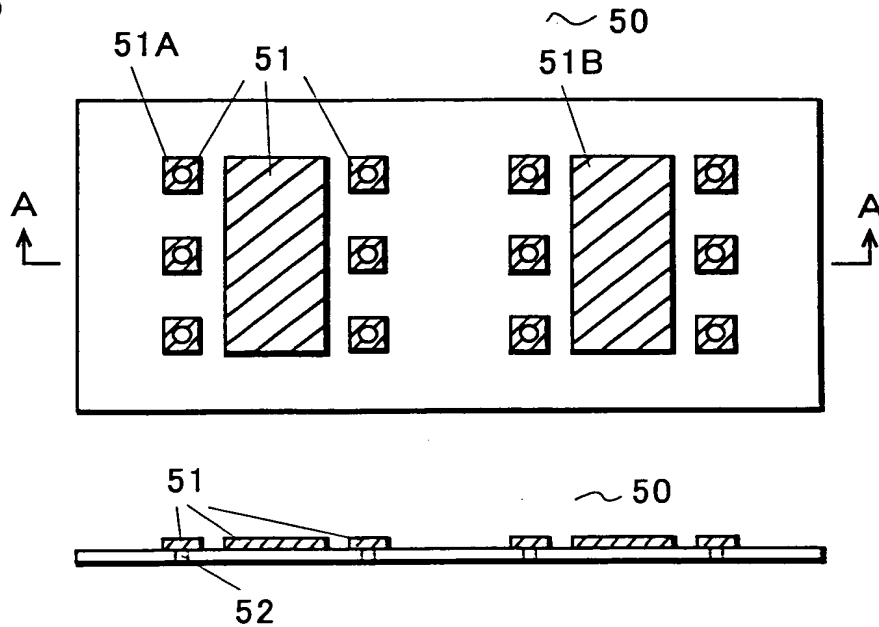


FIG.14

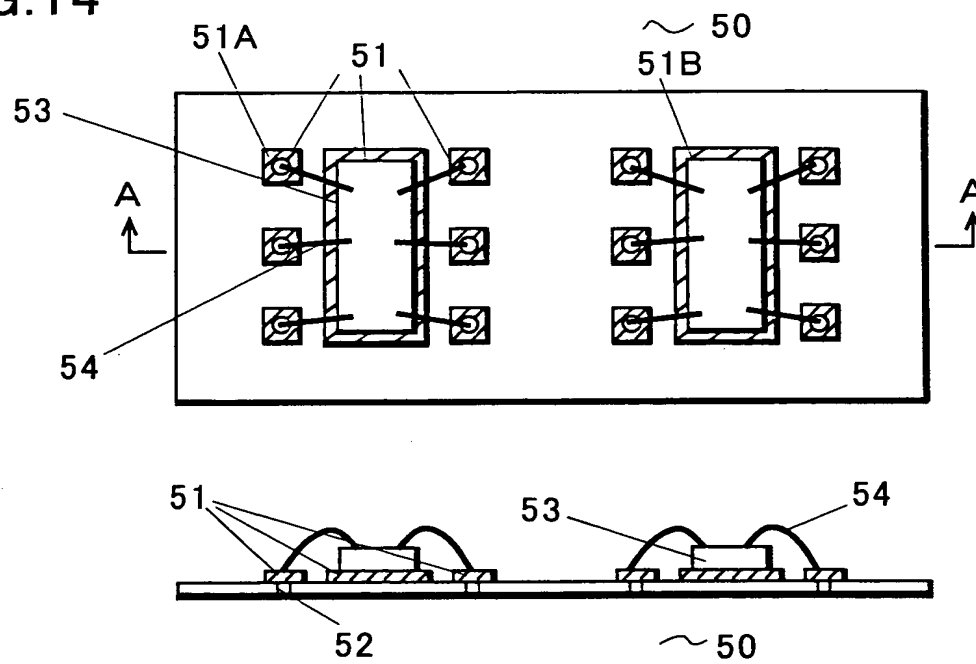


FIG.15A

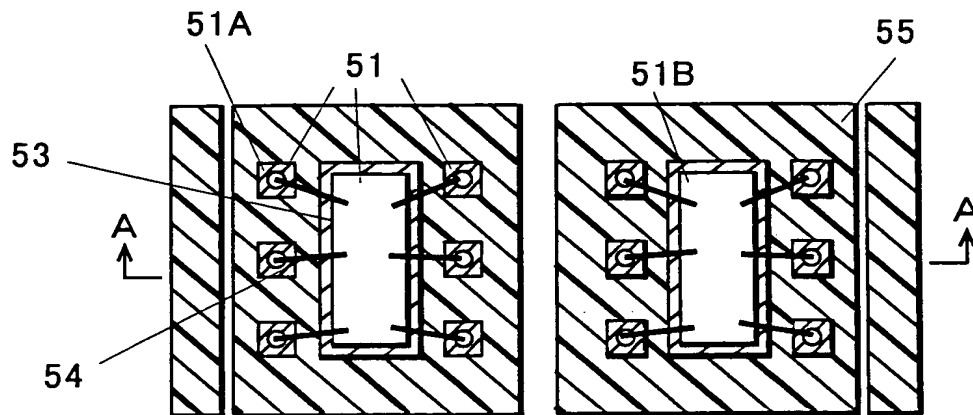


FIG.15B

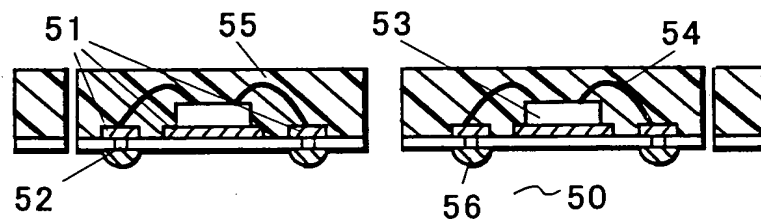


FIG.15C

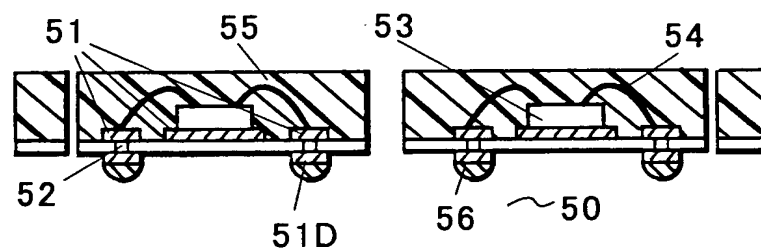


FIG. 16

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